

Remarks

In the outstanding Official Action, the Examiner:

(1) rejected claims 1-16 under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention; and

(2) rejected claims 1-8 under 35 USC 102(e) as being anticipated by Hsu et al.

In response to Item 1 above, Applicants have now amended claims, 1, 7-9 and 15 so as to more clearly define the present invention. Accordingly, claims 1, 7-9 and 15 are believed to be in condition for allowance, and allowance thereof is respectfully requested.

Claims 2-6, 10-14, and 16, which depend either directly or ultimately from independent claims 1, 9 and 15, respectively, are believed to be in condition for allowance for at least the above-identified reasons. Accordingly, allowance of claims 2-6, 10-14, and 16 is respectfully requested.

In response to Item 2 above, Applicants have now amended claims 1 and 7 so as to further define the present invention with respect to the prior art of record.

Independent claim 1 of the present invention comprises a fiber-semiconductor laser source comprising an optically pumped tunable VCSEL, a fiber amplifier configured to receive a VCSEL laser output of the tunable VCSEL, an optical pump source producing a pump laser output at a given wavelength, coupling optics configured for coupling the pump laser output of the optical pump source to the tunable VCSEL, the coupling optics configured for coupling the pump laser output of the optical pump source to the fiber amplifier, and the coupling optics configured for optically pumping each of the tunable VCSEL and the fiber amplifier with the pump laser output at the given wavelength.

Applicants believe that Hsu et al. disclose optical pump diodes used together with optical fiber amplifiers. Applicants further believe that Hsu et al. do not disclose or suggest a laser source including coupling optics configured for optically pumping each of a tunable VCSEL and fiber amplifier with a pump laser output at a given wavelength. Accordingly, independent claim 1 is believed to be in condition for allowance, and allowance thereof is respectfully requested.

Claims 2-6, which depend either directly or ultimately from independent claim 1, are believed to be in condition for allowance for at least the above-identified reasons. Accordingly, allowance of claims 2-6 is respectfully requested.

Independent claim 7 of the present invention comprises an efficient laser source comprising a pump laser for emitting a pump laser beam at a wavelength λ_1 , a tunable vertical cavity surface emitting laser (VCSEL), an optical coupler for directing the pump laser beam into the VCSEL so as to cause the VCSEL to emit a VCSEL laser beam at a wavelength λ_2 , an optical gain fiber, and light coupling optics configured for (a) directing the VCSEL laser beam at wavelength λ_2 into the optical gain fiber and (b) injecting the pump laser beam at wavelength λ_1 into the optical gain fiber so as to provide amplification for the VCSEL laser beam.

Applicants believe that Hsu et al. disclose optical pump diodes used together with optical fiber amplifiers. Applicants further believe that Hsu et al. do not disclose or suggest light coupling optics configured for (a) directing the VCSEL laser beam at wavelength λ_2 into the optical gain fiber and (b) injecting the pump laser beam at wavelength λ_1 into the optical

gain fiber so as to provide amplification for the VCSEL laser beam. Accordingly, independent claim 7 is believed to be in condition for allowance, and allowance thereof is respectfully requested.

Claim 8, which depends directly from independent claim 7, is believed to be in condition for allowance for at least the above-identified reasons. Accordingly, allowance of claim 8 is respectfully requested.

In the event that any fees may be required in this matter, please charge the same to Deposit Account No. 16-0221.

Thank you.

Respectfully submitted,

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